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LOCAL DIRECTORY

Medical Society Meetings

MARYLAND

NOTE.—Secretaries are requested to advise us promptly of the election of new officers in their respective Societies, that due announcement may be made in the JOURNAL.

Except where otherwise stated, the Medical Societies of Baltimore meet at the Medical and Chirurgical Faculty building, 1211 Cathedral Street.

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SECTION OF DERMATOLOGY. 3d Wednesdays. Chairman, J. WILIAMS LORD, M.D.; Secretary, I. R. PELS, M.D.

SECTION OF GYNECOLOGY AND OBSTETRICS. 2d Fridays in October, December, February and April. Chairman, J. M. H. ROWLAND, M.D.; Secretary, EMIL NOVAK, M.D.

SECTION OF LARYNGOLOGY. 4th Fridays monthly, 8.30 o'clock. Chairman, LEE COHEN, M.D.; Secretary, G. W. MITCHELL, M.D.

SECTION OF MEDICAL EXAMINERS. 3d Fridays in November and March. Chairman, J. D. IGLEHART, M.D.; Secretary, W. E. MAGRUDER, M.D.

SECTION OF NEUROLOGY. 2d Friday, monthly. Chairman, C. M. BYRNES, M.D.; Secretary, D. D. V. STUART, M.D.

SECTION OF OPHTHALMOLOGY AND OTOLOGY. 3d Wednesdays. Chairman, J. W. DOWNEY, JR., M.D.; Secretary, L. B. WHITHAM, M.D.

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SIR MICHAEL FOSTER AND THE CAMBRIDGE SCHOOL OF PHYSIOLOGISTS.[1]

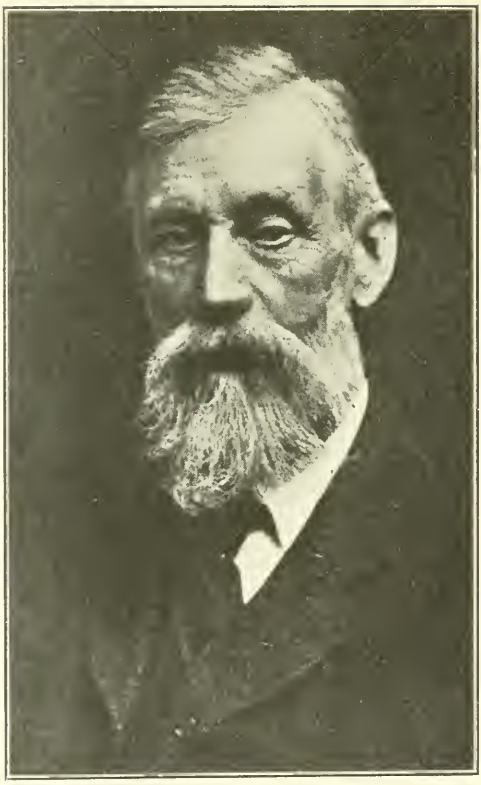
By Fielding H. Garrison, M.D.,
Washington, D. C.

Modern English physiology owes its origins to the inspiration derived from two great teachers, Sharpey and Huxley; its developments to the Cambridge and Oxford professors, Foster and Burdon-Sanderson. Through one of Foster's pupils, Henry Newell Martin, the Cambridge methods of teaching and research were carried over to the Johns Hopkins University, and through different Martin pupils to various parts of the United States. The Cambridge School originated in this wise.

In 1867, Dr. Michael Foster, a medical graduate of University College, London, accepted an invitation from Professor Sharpey to assist him in teaching physiology at that institution. Two years later he was appointed professor, at the same time succeeding Huxley as Fullerian professor of physiology at the Royal Institution. In 1870, on Huxley's recommendation, and, it is said, at the suggestion of George Henry Lewes and George Eliot, Foster was invited to become prælector of physiology at Trinity College, Cambridge, and, in 1883, he was naturally elected to the professorship which was then created. In 1874, Dr. Burdon-Sanderson had succeeded his master, Sharpey, as Jodrell professor of physiology at University College, and, in 1882, became Waynflete professor of physiology at Oxford. Thus, almost in the same year, the two great English universities acquired the two ablest teachers of physiology in the country as professors.

Sir Michael Foster, the son of an English surgeon, was born on March 8, 1836. "You may remember," says his pupil, Adami, "that the eastern counties of England, Norfolk, Suffolk, Essex, Cambridge and Huntingdon, were, in the seventeenth century, the main home of English non-conformity; that the Pilgrim fathers came from this region; that Oliver Cromwell himself was a Huntingdon man. It was at Huntingdon, that quiet little town on the sedgy Ouse, that Michael Foster was born." His parents being fervent non-conformists, of the Baptist persuasion, Foster was

[1] Read at the meeting of the Book and Journal Club of the Medical and Chirurgical Faculty of Maryland, Osler Hall, November 17, 1914.



SIR MICHAEL FOSTER, K.C.B., M.D., Lond., D.C.L., LL.D., D.Sc., F.R.S.

prevented by his religious opinions from entering Cambridge, but at London University, where he acquired his medical education, he was thrice a gold medalist. Like Darwin and Huxley, he served as a ship's surgeon in his youth, threatened pulmonary consumption having induced him to accompany the ship "Union" on a voyage to build a lighthouse on a rock in the Red Sea opposite Mt. Sinai. Upon his return, he practised medicine for six years with his father at Huntingdon (1861-7), after which he entered upon a life devoted to teaching and research. Elected F.R.S. in 1872, he succeeded Huxley as biological secretary of the Royal Society in 1881, holding this office until 1903. In 1900 he was elected to Parliament, representing the University of London as a Liberal Unionist until 1906, when he was defeated by twenty-four votes. On January 28, 1907, he died suddenly from pneumothorax, caused by the bursting of an esophageal ulcer, and was buried in the cemetery of his native town, Huntingdon.

Foster's master, William Sharpey, is known to us mainly by his discovery of the fibers of Sharpey, but, in his time, he was, in Foster's words, "the only pure physiologist in England * * * the only man of the time who devoted all his life to physiology." In those days physiology was taught in the English schools by practising physicians and surgeons, and even Sharpey, as Foster tells us, taught physiology "entirely by lectures."

"I remember very well that when he was lecturing on blood-pressure, and was describing to us the then new results of Ludwig, endeavoring to explain to us the blood-pressure curve, all he had to help him was his cylinder hat, which he put upon the lecture table before him and with his finger traced upon the hat the course of the curve. That was the way that physiology was taught by Sharpey in England in the year 1854. And yet Sharpey taught it as nobody else taught it. Nobody else in England then was teaching physiology as Sharpey taught it, and, as I tell you, he used his hat, and a very old hat it was, as a kymographion, for blood pressure."[2]

When Foster succeeded Dr. George Harley at London University in 1867, he had, he says, a small room and a few microscopes. He immediately began to make his pupils prepare their own tissues ("a new thing in histology") and put them through some simple experiments on muscle and nerve and other preparations. "That," he says, "was the beginning of the teaching of practical physiology in England, which has become what it is in the present year and the years that have elapsed between then and now."

In London, Foster came in contact with Huxley, who had begun to introduce the modern methods of teaching biology in Jermyn

[2]Foster, Colorado M. J., Denver, 1900, vi, 420. The above, from a stenographic report, is not a good example of Foster's literary style, which is admirable, but of his spoken manner, which was then Parliamentary. A "good Parliamentary manner," of which there are innumerable examples in Hansard, consists in a curious balancing of repetitions and circumlocutions, the probable object being to give the speaker's audience time to assimilate the details of his subject. It was used with remarkable skill in the "stealthy approach" of Beaconsfield's final attack on Peel.

Street, and who was afterwards assisted by Foster in preparing a course of elementary biology at South Kensington in 1870. As Professor W. T. Porter tells us, Foster got his professorship at the Royal Institution in the following way:

"According to Sir Michael's own story, he owed the appointment at the Royal Institution to a lady. At the close of one of Huxley's celebrated lectures on the brain, this lady expressed her appreciation of the masterly clearness with which Huxley had made the structure and function of the brain so plain to them. She herself was especially interested in the cerebellum, and would dear Professor Huxley tell her—she could not *quite* remember—whether the cerebellum was on the inside or the outside of the skull? Whereupon the despairing Huxley, long tried by the frequent combination of general information and special ignorance, wrote to Foster to take his place at once."[3]

When Foster went up to Cambridge as prælector of physiology in 1870, accompanied by his demonstrator, Newell Martin, he was assigned one small room for both lectures and laboratory work, the rest of the building being given to the Plumian professor of astronomy. Adami relates that Foster soon acquired other rooms by starting certain chemical investigations so obnoxious to the Plumian professor that he was glad to vacate the premises. During the first year of his incumbency, Foster in company with Sharpey, had made a tour of the German laboratories, and his first care, at Cambridge, was to introduce special classes in physiology, physiological chemistry, histology, biology and embryology, all new features of university teaching in those days. At this time the biological sciences were represented at Cambridge by Humphry, Babington and Newton, three professors of the old school whose lectures were mainly descriptive. Foster collaborated with Huxley in the teaching of elementary biology on evolutionary principles and of physiology as one of the biological sciences. His lectures came, says Gaskell, "as a revelation, and, in combination with the enthusiasm and sympathy of the man, caused many of the small band of his earliest students to decide there and then to take up a scientific career and follow him." Of his method of teaching Adami says:

"I can see him now, standing there before the blackboard, with no table before him, without a note, without a diagram save an occasional very elementary figure drawn without artistic pretense upon the board, and can almost hear again the deliberate yet forceful speech, emphasized from time to time by bringing the chalk in the right hand down into the palm of the left. His men were not to depend upon diagrams, but upon what they actually saw. And after the lecture we trooped for a two-hour period into the laboratory, where the teaching had, whenever possible, a direct bearing upon the subject of the lecture."

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[3]Porter, Boston M. & S. J., 1907, clvi, 510.

This is exactly the way in which physiology was taught in the biological laboratory of the Johns Hopkins University, from the time of Foster's pupil, Professor Martin.

Although he was the inspirer of his pupils, Foster was more the great teacher, expositor and interpreter of physiology than the natural-born investigator. He had the imaginative mind, of philosophic cast, which can map out essential problems and their probable solution, but he had, Adami thinks, little interest in mechanism and technique, and perhaps no mechanical ability. Aside from this, his life, during his Cambridge period, became a never ending still beginning round of public activites. He was in constant request as a secretary of scientific societies, member of Royal Commissions and departmental committees, parliamentarian, after-dinner speaker, organizer of scientific societies and international congresses, mentor of all who contemplated undertaking research work in his field. It was an evil day for Cambridge, says Adami, when Foster went into Parliament, for it led to the ultimate resignation of his professorship and so took him away from his pupils and his work. In recognition of his public services, he was created K. C. B. in 1899. In 1875, the Physiological Society was founded by Foster and Burdon-Sanderson, with the warm support of Huxley. In 1881, at a breakfast party given to Foster, Goltz, Heidenhain and Kronecker by Professor Yeo, Kronecker proposed an International Congress of Physiologists, which became an accomplished fact, largely through Foster's activities. The first congress was held at Basel in 1889, Foster himself was president at the Cambridge meeting in 1898, and, in 1901, he was made honorary perpetual president at Turin, and received an inscribed tablet at the hands of Professor Mosso.[1]

Of Foster's original investigations in experimental physiology, perhaps the most interesting were his researches on the snail's heart in 1859, in which it was noted that any part of the heart, separated from the rest, will beat rythmically, with the conclusion that "the beat cannot be the result of any localized mechanism, but is probably the peculiar property of the general cardiac tissue," a hypothesis which, it need hardly be said, is the central feature of Gaskell's work on the heart. Later, Foster studied the effect of electric currents on the heart with Dew Smith, concluding that the ganglia play a subordinate part in the production of cardiac movements, that the nerve cells do not send out impulses causing contraction, and that the nerves do not convey such impulses from part to part, but merely serve to keep each part informed as to the state of the rest. Foster believed that each muscle cell of the heart has an obscure "sense" of the condition of the other parts, which reminds us of some of John Hunter's theories about the living tissues.

To facilitate his work in the Cambridge laboratories, Foster co-operated with Burdon-Sanderson, Lauder Brunton and Klein

[1] For a copy of the Latin inscription, with translation, see Zentralbl. f. Physiol., Leipz. u. Wien, 1904, xxvii, Erganzungsbd., 18.

in a "Text Book for the Physiological Laboratory" (1873), with his pupil Balfour in "Elements of Embryology" (1874), and with another pupil, J. N. Langley, in "A Course of Elementary Practical Physiology" (1876). He assisted Huxley in the later editions of his Physiology, and was joint editor of the collective edition of Huxley's Scientific Memoirs (1898-1902). In 1878 he founded the *Journal of Physiology*, the first English journal to be devoted exclusively to the subject, and remained its editor until 1894. This journal contained many American contributions, the names of Bowditch, Wood and Martin appearing on the title page as co-editors. In 1894 J. N. Langley became associate editor, succeeding Foster as editor-in-chief in 1907. Foster's great "Text Book of Physiology" (1876) passed through six editions and part of a seventh, was translated into German, Italian and Russian, and became widely known as the best critical treatise on the subject in English in its time. "In America," says Gaskell, "it was *the* text book," a statement which also held good for Huxley and Martin's "General Biology" and Foster and Balfour's "Embryology," in their day. Of Foster's "Physiology," Adami says:

"Written in admirable English, it showed the student that science is not the mere memorizing of facts, but is the process of constantly balancing those facts and from the deductions gaining principles. I have here Foster's own copy of his first edition. How puny and second-class it makes all previous manuals of physiology! It was no compilation of the contradictory data obtained by LeBlanc, of the University of Nesaisquoi, and Schwarz, of the University of Weissnicht, but a reasoned endeavor to select the grain from the chaff, an education in the scientific weighing of evidence, a thoughtful and philosophical treatise in pure and delightful English. It was a revelation of the way in which a text book as distinct from a 'cram book' should be written; it was, in short, an example of true scientific literature, with an occasional passage that delighted the reader as rising beyond scientific literature into the realm of great and memorable writing."

As a contributor to medical history Foster will always be remembered for his biography of Claude Bernard (1899) and his Lane Lectures on the History of Physiology, delivered at Cooper Medical College, San Francisco, in 1900. The memoir of Claude Bernard has the following modest dedication:

"To the physiologists of France, both to those who had the happiness to know Claude Bernard in the flesh, and to those who, like myself, never saw his face, this little sketch is dedicated in the hope that as he has been to me a father in our common science, so I may be allowed to look upon them as brethren. M. Foster."

This little book is the most sympathetic account of Bernard ever written. The close *rendement* of his scientific work is stated in the clearest, simplest, most intelligible language, and imbued with the true spirit of "historic thinking." The paragraphs describing Bernard's experiments and their tendency are usually copied or abstracted by those who have not either the time or

inclination to consult original reports to the Academie des Sciences. A work of the same kind is the History of Physiology in the sixteenth, seventeenth and eighteenth centuries, which is written with inspiration and enthusiasm from end to end, a genuine piece of literature, full of life and color, one of the most important of English contributions to medical history. With these two books may be grouped the inaugural historical addresses before the International Medical Congresses at London (1881) and Rome (1894) the Huxley lecture of 1896, which is the best survey in English of the tendencies of modern physiology, and the delightful "Reminiscences of a Physiologist," delivered before the students of the Denver College of Medicine in 1900. Foster excelled in public addresses. "As an after-dinner speaker," says Langley, "he was excellent, and, at his best, was in the very first rank. He spoke, as he lectured, very slowly, and without any freedom of gesture. A peculiar gleam of the eye announced the coming of a humorous allusion, and a jest was followed by an inimitable suppressed laugh, which was the delight of all his friends. On other occasions he was grave and earnest and, as Dr. Pye-Smith has said, 'Few public speakers knew better how to express sympathy or sorrow in dignified and graceful terms.'" His Royal Society obituary of Newell Martin will be remembered in this connection. Of his pupil Balfour, Foster left no less than three memorial notices, one for the Royal Society, one for Leslie Stephen's Dictionary of National Biography, and the affectionate tribute in the *British Medical Journal*, which, as Porter says, "was his gifted pupil's requiem in the sad days after the frightful hour at the *Aiguille Blanche de Peuteret*." Few writers have better understood the true interest of medical history, the inspiration it affords for the physician's life work, as expressed by Allbutt: "We celebrate the memory of great men in the certain hope that in their children they will be born again."

FOSTER'S PUPILS.

Foster, who early saw that he would be pulled this way and that in all sorts of public activities, cheerfully gave up his research work in favor of his pupils and generously aimed to set them on their feet as independent investigators, creating special chairs for them where he could, and otherwise placing or launching them. In this he resembles Ludwig, but the scope of his teaching was wider than Ludwig's, covering all branches of general biology. Thus he made his pupil Liversidge, professor of chemistry; Milnes Marshall, professor of zoology, Balfour, professor of animal morphology, and Sidgwick, reader in animal morphology at Cambridge. In 1884, his pupil Ray was elected to the newly created chair of pathology. At Foster's instance, Sydney H. Vines and Sir Francis Darwin took up vegetable morphology. Vines founded the school of experimental botany at Cambridge, and, upon becoming professor of botany at Oxford, was succeeded by Darwin at Cambridge. Foster soon turned over embryology to Balfour and

in 1882, Vines and Sidgwick relieved him of general biology, so that he could devote all his future time to his physiological pupils. Before enumerating these, let us consider the most important of the biological group, Francis Maitland Balfour (1851-82).

Born at Edinburgh, November 10, 1851, a younger brother of the well-known English statesman and a nephew of the Marquis of Salisbury, Balfour was fitted by his family connections for a political career, but decided to devote his life to natural science. Foster called him a born naturalist and Darwin predicted that he would be the leader of English biologists, a prediction which might have been verified but for his sad, tragic and early death, perhaps the greatest loss of this kind sustained by modern English science. Balfour was left handed, somewhat awkward in muscular exercises in early youth, but he overcame these handicaps so well that he was not only expert in laboratory manipulation, but became an enthusiastic Alpine climber. Attempting the ascension of a virgin peak on Tuesday, July 18, 1882, he fell over the precipitate height, with his guide, and the bodies of both were found lying dead, "high up in the mountains at the foot of a couloir," on the following Sunday.

Sitting in the little room of the philosophical library at Cambridge, Balfour once asked Foster to advise him as to his future career. Gnawing his moustache for a moment, Foster's eye fell upon an egg lying on a bench, which he cracked, showing the embryo inside, with the suggestion "What do you think of working at that?" This was the genesis of Balfour's great two-volume treatise on comparative embryology (1880-81), the most remarkable modern work on the subject. It is best described in Foster's own language:

"It is not only a masterly digest, in which the enormous number of observations made during the last quarter of a century, and especially during the last decennium, are marshalled in proper order, and their nature and significance clearly and accurately explained; it also contains, one might say in almost every page of the two thick volumes, the record of original, often laborious inquiries, to which the author was stimulated sometimes for the sake of verifying the statements of other observers, but more frequently for the purpose of solving morphological problems which presented themselves to him as the work went on. Some of the larger results, which thus sprang out of the work, elaborated as inquiries carried out by himself, or through him by his pupils, were published as separate papers; but even when these are accounted for, there still remains imbedded so to speak in the work, an enormous amount of original work, in the form both of new facts observed by himself and of luminous interpretations of the facts which others had recorded, but whose true meaning others had failed to see."[5]

After spending some time with Anton Dohrn at Naples, Balfour

[5]Proc. Roy. Soc. Lond., 1883, xxxv, pt. 2, p. xxiii, xxiv.

collaborated with Foster in the well-known student's text book of 1874. As an independent investigator, he solved the problem of the nature and origin of the uro-genital system of vertebrates (1874), and gave a complete account of the development of the elasmobranchs. He had been an ardent geologist from boyhood up, and in 1868 Huxley awarded him one of the prizes for an essay on the geology and natural history of East Lothian. Foster says he "knew his British birds" as few others did, and his unfinished monograph on Thysanoura would, if completed, have placed him in the first rank.

Foster describes Balfour as "the friend, whose gentle courtesy, sound judgment, unswerving faithfulness, warm affectionateness and bright intellect seemed to make life easier whenever he was present."

In the biological laboratory of the Johns Hopkins University there hangs a portrait of Balfour, which we raw students of 1888-90, who were just getting oriented to the novel experience of being thrown upon our own resources, would often linger to peer at, a strong Scottish countenance, grave, dark-eyed, serious, sincere, the face of one who would have been a natural leader in any field of human endeavor.

Foster's physiological pupils include the names of Gaskell, Langley, Sherrington, Henry Head, Newell Martin, Roy, Adami, Gowland Hopkins, Barcroft, H. K. Anderson, Dew-Smith and Sheridan Lea. The earliest of these was his first demonstrator at Cambridge, Henry Newell MARTIN (1848-96), a native of Newry, County Down, Ireland, who matriculated in medicine at the University of London at the age of sixteen. Foster, who was then teaching there, relates that there came to him a boy who said, "I am very sorry, sir; I should like to take your course if I could, but you see my parents are not very well off and I get my board and lodging with a doctor close by. I have, in return for my board, to dispense all the doctor's medicines, and that dispensing takes me always from 2 to 5; now your lectures begin at 4. I cannot come for the first hour. You go on to 6. May I come in for the second hour? I will work hard and will try to make up the lost time." This boy was Newell Martin, who afterwards did so well that he became assistant to Foster and Huxley at Cambridge, collaborating with the latter in his "Elementary Biology" (1875). In 1870 he became, upon Foster's recommendation, professor of biology at the Johns Hopkins University, holding this position until 1803. At the Johns Hopkins, Martin introduced the Cambridge methods of teaching biology and physiology, which were carried forward by his pupils, W. K. Brooks, W. H. Howell, W. T. Sedgwick, Henry Sewall, and many others. In original research his investigations were mainly devoted to the heart, notably his Croonian Lecture on the effect of temperature on the heart beat (1883), which won him his F.R.S. He was the first to show, in 1880, that the heart and lungs can be isolated or excluded from the body for investigation

purposes. With W. T. Sedgwick he settled experimentally the function of the internal intercostal muscles, and measured the coronary blood pressure and pulse wave directly by putting a canula in a coronary artery of a living dog, although Cohnheim had said that occlusion of this artery would be fatal.[6]

Martin was blond, small in stature, handsome in features, his nose of refined, delicate curve, his large eyes having the "dim blue stare" which the Irish novelist associates with the Celt. That blue stare, half dreamy, half pathetic, and minus the "twinkle," was expressive of much to some of us who dabbled in the elementary features of experimental physiology in our student days. It seemed to say: "Am I addressing a blockhead or a being endowed with normal reasoning powers?" At stated intervals of time, set examinations were held in the classrooms on the descriptions of animals in Huxley and Martin's Biology, which are written in a kind of scientific shorthand. The following week, the names of the class would be written on the blackboard by Professor Martin himself, in strict order of merit, according to the markings, "Good," "Fair," "Poor," "Bad." We whose names would have stood near the top, had these lists been placed in inverted order, would frequently visit Professor Martin's private room to discover, if possible, why our markings were so invariably poor, even though some had actually memorized these elliptical descriptions of living creatures verbatim, like a declamation. The grilling which we were put through on these occasions made it clear that the object of these examinations was to test the student's capacity for expressing scientific facts in an accurate and unmistakable manner. Martin not only taught his students physiology, but aimed to teach them how to write English.

Walter Holbrook GASKELL (1847-1914), perhaps Foster's greatest pupil, did the most important work on the physiology of the heart after Ludwig and laid the histologic foundations for the modern study of the autonomic nervous system. The son of an English barrister, he took his medical degree at London University, and was one of the earliest to come under Foster at Cambridge, at whose suggestion he entered Ludwig's laboratory in 1874, producing an important paper on the vaso-constrictor fibers of striated muscle. This was the beginning of his studies on the circulation which were to become so important in internal medicine. At this time the neurogenic theory of the heart's action, that its movements originate from nervous impulses, was in the ascendancy, and seemed borne out by the discovery of the ganglia of Remak and Bidder in the heart, by the Weber brothers' discovery that stimulation of the vagus will stop the heart, and by the experiments of Stannius, in which a ligature or cut at the sino-auricular junction stops the heart, while a second ligature at the auriculo-ventricular groove will cause the ventricle to beat again. Gaskell, by his "suspension method," showed that the

[6] H. Sewall, Johns Hopkins Hosp. Bull., Balt., 1911, xxii, 333.

motor impulses from the nerve ganglia are discrete non-continuous stimuli, influencing the heart's rhythm, but not originating its movements, which are the effect of a general peristaltic wave passing from sinus venosus to bulbus arteriosus, and from muscle cell to muscle cell. The experiments of Gaskell and Engelmann upon sectioned hearts and isolated strips of heart muscle, containing no nerve tissue, gave a clear picture of this rhythmic wave, which, Gaskell showed, is reversible. He introduced the term "heart block" and produced it experimentally, as also the two-, three- and four-time gallops of the clinics, interpreting these and the effects of the Stannius ligatures as simple cases of block. He also produced "fibrillation of the heart" experimentally, interpreting the condition as a system of blocks betwen the connections of individual muscle cells. Before Waller and Einthoven he investigated the electrical condition of the heart with a galvanometer, showing that these phenomena exist in a quiescent heart. The observation of Schmiedeberg, that stimulation of the vagus after exhibition of nicotine will hasten the heart (1871), was shown by Gaskell to be a simple case of nicotining the pre-ganglionic inhibitory fibers of the vagus, preventing these inhibitory impulses from getting across the synapse in Remak's ganglia, the post-ganglionic accelerator fibers, which originated from outlying ganglia, being unaffected by the poison. In confirmation of this, he showed that direct stimulation of the venous sinus "would still cause standstill, because, with the electrodes in that position, the post-ganglionic fibers from Remak's ganglia were stimulated." This ingenious application of Langley's nicotine method showed that the action of the vagus upon the heart is not inhibitory but quiescent, the nerve acting both as whip and bridle, and the whole nervous mechanism integrating and regulating the heart's action. In connection with this work, Gaskell made vast researches in the comparative histology and physiology of the sympathetic nervous system in different animals, which led to his great memoir of 1886, in which the distribution of the "autonomic systems" is mapped out in detail and the whole ground plan for later experimental research "laid down," as naval constructors have it. Gaskell's researches in this field were, as Langley says, "mainly histological," but this memoir is the anatomical basis of all recent work. In 1893 Gaskell showed that chloroform lowers the blood pressure by a direct action upon the heart, and not upon the vasomotor center. The rest of his life was devoted to his theory of the origins of the nervous system, the central canal of which he believed was, in the first instance, the lumen of a primitive gut.

John Newport Langley, who succeeded Foster as professor of physiology at Cambridge, made important investigations on the cell changes in pancreatic secretion, on the liver fat, and on physiology of the salivary and gastric secretions, but his greatest work has been the definition and interpretation of the "autonomic

[illegible]

[illegible] For a fuller account of Gaskell's [illegible] see the memorial address by Prof. F. H. Pike and the [illegible]

system." In 1869 (with W. Lee Dickinson),[8] he showed that upon painting a sympathetic nerve ganglion (Foster's synapse) with nicotine, the passage of nervous impulses across it will be blocked, and the fact that this drug acts selectively upon these ganglia and not upon those of the cerebro-spinal system, led to his view of the sympathetic and cranio-sacral system of spinal nerves as "autonomics" for the redistribution of all efferent impulses which do not terminate in striped or voluntary muscle. This work, and the important memoir of Langley and Anderson showing that reflexes from isolated sympathetic ganglia are not true reflexes, but rather actions along branching efferent nerves, suggests at once the interpretation of reflex arcs and the integrative function of the nervous system by Charles Scott SHERRINGTON, who was one of Foster's late pupils and succeeded the late Professor Gotch as Waynflete professor at Oxford in 1913. Sherrington's work on reciprocal innervation, reinforcement, antagonism and coordination in various reflexes brought out the point that simple reflex arc, functionating by itself, is a mere abstraction, most reflexes being so intricately compounded and interrelated that the nervous system functionates only as a whole, as set forth in his monograph on "The Integrative Action of the Nervous System" (1906).

Henry HEAD, editor of "Brain," carried forward and completed the work of Rosenthal and Hering upon respiration, showing that the action of the vagus upon the lungs is analogous and similar to its action upon the heart, quiescent and regulative. His work on the cutaneous distribution of pain referred from the viscera (Head's zones) is familiar, as also his studies on regeneration of sensory nerves, which were made by sectioning nerves in his own body.

Charles Smart Roy (1854-97), who came from Sharpey's native town, Arbroath, Scotland, graduated M.D. at Edinburgh in 1875, served as surgeon-major in the Turkish army during the Turko-Servian War, studied with Virchow, Du Bois Reymond, Goltz, Cohnheim at Leipzig, and finally with Foster at Cambridge, where he was appointed to the chair of pathology in 1884. He was a remarkable inventor of physiological instruments, of which his frog cardiometer, sphygmotonometer, renal oncometer, and cardio-myograph are known and used by physiologists and pathologists. He made important researches on the extensibility and elasticity of the blood vessel walls, on the renal circulation (with Cohnheim), discovered an automatic rhythmic tonus in the mammalian spleen, was one of the earliest to confirm Koch's discovery of the cholera bacillus, and devised a successful preventive inoculation against a cattle disease in the Argentine. His most important work is that on the mammalian heart, which was carried out with Adami in 1892. Roy was a tireless worker, who became prematurely gray and died from nervous breakdown, the effect of his incessant labors.

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[8]Proc. Roy. Soc. Lond., 1889, xlvi, 123; 1890, xlvii, 379.

John George ADAMI (1862-), of Manchester, England, entered Cambridge in 1880, held the Natural Science Tripos in 1882 and 1884, was Darwin prizeman (1885), and took his M.D. in 1890. With Kanthack, William Hunter, *et al.*, he was one of those selected by Roy for the Lucas Walker studentships in pathology, and collaborated with him in the great memoir on the mammalian heart above mentioned. Settling in Montreal, he became the leading pathologist of Canada. His works on cancer, heredity, classification of tumors, etc., and his textbooks on pathology are widely known.

Frederick Gowland HOPKINS, prælector in biochemistry at Trinity College, is known by his method of estimating uric acid in the urine (1892), his analysis of tryptophan (1902), and by his work on gout and metabolism. His promised history of physiological chemistry will probably be the authoritative work on the subject.

Joseph BARCROFT (1872-), of Newry, Ireland, now senior demonstrator of physiology at Cambridge, has devoted himself to important investigations on the chemistry and metabolism of the blood, which are summed up in his recent monograph, "The Respiratory Function of the Blood" (Cambridge, 1914).

Of the other Foster pupils, Hugh Kerr ANDERSON (1865-), of Hampsted, England, collaborated with Langley in his memoir on reflex actions from sympathetic ganglia and other important researches. Arthur Sheridan LEA wrote an appendix to Foster's textbook entitled "The Chemical Basis of the Animal Body" (1892) and other memoirs in the *Journal of Physiology*. A. G. DEW-SMITH collaborated with Foster in investigating the effects of electric currents on the heart (1876-7), and made researches on double nerve stimulation (1873) and on an insoluble sugar-forming substance in penicillium (1873). He was a man of wealth, who financed the *Journal of Physiology* and established the Cambridge Scientific Instrument Company, which made the laboratory apparatus.

Such was the scientific work of the pupils of Sir Michael Foster, work second only in importance to that which came out of Ludwig's laboratory. As with Ludwig, Foster's name and fame may be said to live forward in the work of his pupils. Since the early eighties the achievement of the Cambridge laboratory has not been surpassed by any other recent work in physiology.

In private life, gardening was Foster's recreation, and he carried the experimental trend of his mind into the hybridization of irises and other plants, in which he was a forerunner of De Vries and Luther Burbank. Langley says:

"His garden was his chief relaxation. He loved masses of flowers and had large beds of cyclamen, anemones, daffodils, irises, and many others. His rock garden in early summer was a blaze of color. He was especially successful in growing varieties of Eremurus, and their noble spikes were a great feature of the garden. But he loved still more growing rare plants and experimenting

in hybridization. Most of all he loved irises, and many a traveler in distant lands enriched his collection. On these he became one of the first authorities and produced a number of new hybrids, with an account, on which he was busy to the last."

Foster's memory has been well preserved in the memorial notices by his pupils Gaskell, Langley, Adami, and, in this country, by the obituary of Professor William Townsend Porter.[9] Of the various likenesses of Foster, Porter says:

"The journals have published a photograph of Sir Michael as he might have looked on rising to address the Royal Society; a strong face, deeply lined, kindly and wise. Yet it is not the whole man. It is, so to say, official. The real man is shown in another photograph. Sir Michael in an old, old coat—the choice if not the fruit of wisdom—is seated on a bench against the rough board wall of a cabin in the Adirondacks. His hand grasps a mountain staff, the symbol of activity. But the good gray head leans comfortably back against the cabin, the historic pipe is in his mouth, and kindly wrinkles, the harvest of many well-spent years, surround his smiling eyes."

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[9] Gaskell. Proc. Roy. Soc. Lond., 1908, S. B., lxxx, obit., pp. lxxi—lxxxi, port.
Langley. J. Physiol., Lond., 1906-7, xxxv, 233-246, port.
Adami. Publ. Med. Fac. Queen's Univ., Kingston, 1913, No. 7, 1-17.
Porter. Boston M. & S. J., 1907, clvi, 309-311.

PROGNOSIS IN CARCINOMA OF THE UTERUS.

By William Sisson Gardner, M.D.,

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The prognosis in carcinoma of the uterus depends upon the variety of the carcinoma, the progress that has been made when it is discovered and the treatment instituted.

We have as a rule depended for our prognosis almost entirely upon the degree of advancement and the treatment, and have said little about the variety of the carcinoma. Many of our statistics giving reports of cures of carcinoma of the uterus by some particular operation have almost invariably failed to state the variety of cancer operated upon, or the classification has been confined to a simple division into carcinoma of the cervix and carcinoma of the body of the uterus. While this simple division is of some assistance, it is very far short of what should be stated. This becomes clear when we remember that there are at least four distinct types of carcinoma of the cervix and certain modifications in the type of the adeno-carcinoma of the body of the uterus.

Covering the vaginal portion of the cervix and extending as far as the external os, we have the same variety of squamous epithelium that covers the vaginal mucous membrane. From this squamous epithelium we have three distinct varieties of carcinoma

developing; the first variety made up of cells from all the layers of the squamous epithelium, which for lack of a better name we will call squamous carcinoma; second, the basal cell epithelioma, which is developed from the lowest layer of the normal epithelium, and third, the scirrhus carcinoma, which is characterized by its slow growth and the increase of the connective tissue between the masses of penetrating epithelium.

Of these three varieties, the squamous carcinoma is the most malignant. It is the type commonly found in the younger women and extends very rapidly. In this variety the invading epithelium dips into the normal tissues in large masses. The epithelial cells are very irregular in size, shape and staining qualities. In the tissues of the cervix, just beyond the epithelial invasion, is a zone crowded with small round cells. This variety of carcinoma extends more rapidly than any of the others, getting out into the broad ligaments at a very early period of its growth. It has very little tendency to extend upward into the uterus. Even in the last stages it is very rarely seen to have penetrated the uterus farther than the internal os. This early extension into the broad ligaments and its rapid development makes the prognosis in this variety very grave.

In the basal cell variety the masses of penetrating epithelium are very much smaller in the earlier period of growth, and they are distinctly isolated from each other. It can be recognized by the uniformity of epithelial cells both in size and distribution of chromatin, and by the usual absence of pearls and prickle cells. It has a tendency to grow upward into the uterus, and less tendency than the squamous cells variety to penetrate into the broad ligaments. It does not break down and begin to bleed quite so early as the squamous carcinoma. For this reason it sometimes makes great progress before there are any symptoms to call attention to its presence. When discovered early it is much more easy to remove it completely than the squamous cell variety.

In the scirrhus form there is a very slow invasion by the epithelial cells. The cells are very deficient in chromatin, and there is a great increase in the connective tissue, which apparently affords resistance to the invading epithelial cells. The result is that this form of malignant growth makes very slow progress and may extend over a long period of years before there is any great destruction of the tissue.

The mucous membrane of the cervical canal and the glands in it are lined by a high columnar epithelium which is present in a single layer. From this variety of epithelium we have developed adeno-carcinoma of the cervix. When examined microscopically we find a large number of new gland spaces. These new gland spaces are lined not by a single layer of epithelium as in the normal glands, but by an irregular number of layers of epithelium. This increased proliferation of epithelium has the tendency to ultimately fill all the gland spaces. The nuclei of the glands are irregular in shape and the staining is very irregular. The newly-

formed cells stain the more deeply. Adeno-carcinoma of the cervix has little tendency to break down early, consequently it causes very little hemorrhage until late in the disease, and there is nothing to call attention to it in its early stages. Early adeno-carcinoma of the cervix is discovered by accident, if discovered at all. The reasons for the grave prognosis in adeno-carcinoma of the cervix is because it is usually not discovered until it has already penetrated the other structures in the pelvis outside of the cervix. If we had any means of detecting it early there is every reason to believe it could be dealt with as successfully as adeno-carcinoma of the body of the uterus.

The surface of the endometrium of the body of the uterus and the glands in it are lined by a low columnar epithelium which is present in a single layer. From this variety of epithelium develops the adeno-carcinoma of the body of the uterus. The growth starts usually by a variety of finger-like projections on the endometrium. On microscopic examination it is observed that the endometrium is greatly increased in thickness and has developed in it a large number of atypical glands. The epithelium lining the glands is modified in character and the number of cells tremendously increased. This increase in the number of cells causes them to pile up within the glands. The proliferation of epithelial cells is so irregular that no two of the glands present the same general appearance. In the later stages the cell proliferation may be increased to such an extent that the appearance of the gland structure is almost lost.

Adeno-carcinoma of the body of the uterus begins to bleed very early; and if scrapings are examined microscopically is very easily recognized. As it starts much farther from the base of the broad ligament than carcinoma of the cervix, lateral metastises from it come much later.

If all patients who bleed were curetted promptly and the scrapings properly examined, we would rarely have a death from carcinoma of the body of the uterus.

When a carcinoma of the squamous cell variety is discovered the prognosis is always grave without reference to the progress that has apparently been made. By the time any symptoms are produced, in almost every case, there is an invasion of the broad ligaments. In later cases, where there is sufficient extension for the uterus to become fixed in its position, there is practically no hope of recovery.

Many of the basal cell variety offer a more favorable prognosis. In the untreated cases the progress is slower than that of the first mentioned type.

The scirrhus carcinoma develops still more slowly, consequently it runs a very much longer course. It apparently does not metastasise very early, and so offers a better opportunity for complete removal.

We have very few recoveries from adeno-carcinoma of the cervix, because as a rule it is not discovered until it has invaded

the structures far beyond the cervix. Any carcinoma of the cervix that is causing pain has as a rule progressed beyond the point where there is any probability of it being permanently cured.

The prognosis in adeno-carcinoma of the body of the uterus is more favorable than any other variety of uterine carcinoma. This is due to the fact that there is little opportunity for this variety of carcinoma to extend directly to the other structures, and so long as any carcinoma is confined to the uterus it is comparatively easy to remove it.

Only about 13 per cent. of carcinomas of the uterus, including all varieties, metastasise by way of the lymphatics. When the lymphatics are once invaded, there is very little hope of eradicating the carcinoma. Even after the abdomen is opened it is impossible to distinguish all the carcinomatous glands from the ones that are not affected. It occurs very frequently that enlarged glands are removed, which by microscopic examination are found to contain no malignant elements; while in the same pelvis there may be other glands which are not materially enlarged, but which are undergoing malignant changes. It has been found impracticable to remove all the lymphatic glands into which the uterine lymphatics lead, and when all of them cannot be removed it is useless to remove any.

When we come to the relation of operative procedure to prognosis, we still hark back to the pathology. We should stop speaking of the recurrence of carcinoma. A carcinoma that is completely removed does not recur. A carcinoma that is incompletely removed continues to grow, and what is ordinarily meant by recurrence after operation is simply that a portion of the carcinoma was never removed and has continued to develop. That operation will be the most successful that takes out the affected uterus with the widest area of the adjacent tissues.

The manner of removing the carcinoma is largely a matter of personal choice. Not one has obtained any better results than Dr. John Byrne, who did a high amputation of the cervix and resected the broad ligaments with an electric cautery. Some operators have gotten very satisfactory results by vaginal hysterectomy, using clamps and subsequently cauterizing the clamped portion of the broad ligaments. By this means a very extensive destruction of the broad ligaments can be obtained. One great advantage of this operation is that the immediate mortality is very small.

Of three hundred and forty-five cases of vaginal hysterectomy for cancer reported by Ott, there was a mortality of 1.7 per cent. Of the two hundred and forty-six patients whose fate is known after five years, 34.1 per cent. seem to be permanently cured. There is thus seventeen permanent cures to one fatality. He tabulates along with his figures—Wertheim's published statistics of five hundred abdominal cases; the immediate mortality was 19.4 per cent. Of the one hundred and eighty patients whose fate is known after five years, 57.6 per cent. seem to be permanently

cured. The proportion of cures to one fatality is, however, only as 1.7 to 1.

Ott sums up his comparison of the end results with the two methods in the statement: "With the abdominal technic one gets one-and-a-half times more chances of permanent recovery after five years, but one runs eleven times more danger of dying during or after the operation."

It should be remembered that Ott's mortality rate from vaginal hysterectomy of less than 2 per cent. is below the average. But the ordinary mortality of vaginal hysterectomy should not be more than about 4 per cent. On the other hand, Wertheim's mortality of a little over 19 per cent. is far below the general mortality for the extensive abdominal operation. A mortality twice as great would be nearer the correct figure for collected statistics. Both Ott's and Wertheim's statistics would be very much more valuable to us if we knew what they had been operating for. In comparing the two methods of operation we are obliged to presume that the different varieties of carcinoma occurred in the two clinics in about the same relative proportion.

In conclusion, then, in stating the prognosis in any particular case of carcinoma of the uterus, we must consider, first, the type of carcinoma present; second, the progress that has been made when the patient comes for treatment, and last, the method adopted for the removal of the growth.

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WHAT SHALL WE DO FOR THE CONVALESCENT MORPHINE ADDICT?

By C. B. Pearson, M.D.,
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If all morphine addicts were as much alike as peas in a pod, it would be an easy matter to find an answer. The solution of this problem is important to those of us who are specialists in the field. For, however well we may do our work in withdrawing the drug and putting the patient in a condition where he can exist without morphine, we must at least turn out a decent percentage of cases that never relapse if we expect the family doctor to turn his cases over to us. Some institutions advertise that they turn over their cases at once to the family doctor. This is no doubt shrewd business judgment. But it is not a wise solution of the problem. It is shirking the whole matter. Because the family doctor is not likely to understand the dangers that are peculiar to convalescence from morphinism. However, I am always glad to have the family doctor assist the patient to carry out those measures that I deem to be for the best. A doctor writing upon morphinism recently said that the best thing to induce sleep in these cases was muscular fatigue. I know of nothing more likely to produce insomnia. Muscular

fatigue following even slight exertion during the first few days off the drug produces an intolerable aching of the whole body, and especially the back and legs. Muscular fatigue, or any sort of fatigue, for that matter, is the most prolific cause of relapse that there is. After the craving for morphine has once been overcome it cannot be re-established except by a return to the use of the drug. Fatigue will bring on a feeling of the need for some sort of stimulation, but not the old familiar craving for morphine. The convalescent knows of but three stimulants—opium, cocaine and alcohol. The first means immediate relapse, the other two relapse in the near future. One would naturally think of pain as being a frequent cause of relapse. It is not. Pain puts the patient sharply upon his guard. He is accordingly prepared to put up a fight to save himself. There is, of course, danger of relapse from pain. But it is not its intensity so much as its protracted duration that needs to be feared. Pain long continued will exhaust the nervous powers of resistance that nature has been trying to build up since the last dose. Here again fatigue appears. Before the powers of resistance become exhausted the dentist or surgeon should be called in, if operative procedure is indicated. We have been accustomed always to look to opium in some form for relief of pain. In my work I make use of a combination of hyoscine, physostigmine and pilocarpine. The first two in a solution together of such a strength that 20 m. will contain gr. 1/200 hyoscine and gr. 1/100 physostigmine. The pilocarpine in a solution of 1 gr. to the drachm. The first two drugs rarely need to be crowded to the maximum dose as given by the books. The last must be given in at least double the book dose in order to be effective. Hyoscine alone causes a troubled delirium and a feeling of the most intense wretchedness. Physostigmine corrects the bad effect upon the eye, and in this way lessens the hallucinations produced by the hyoscine alone. Its lessening of reflex irritability increases the hypnotic effect of hyoscine. Therapeutic doses also sustain the heart's action. The pilocarpine stops the tossing about, the delirium, and the feeling of wretchedness and promptly produces a quiet sleep. Double doses of this drug are needed. Double doses of pilocarpine alone would be likely to cause alarming symptoms. Given in this combination they do not. Very little or no diaphoresis is produced.

I have been able to arrest the most severe pain with this combination, and it also produces sleep very promptly, while morphine does not. It does not cause nausea or interfere with the appetite. Overwork during the first few weeks is likely to bring on a condition of nervous collapse. Stimulants of any sort should not be given in this case. Hot baths, gentle massage and absolute rest in bed will soon set the patient right again. In the latter part of the convalescence overwork may bring on a condition of nervous irritability, insomnia, loss of appetite, etc., that is especially discouraging to the patient and very likely to cause a relapse. This is likely to be the case if the convalescent has not been forewarned

of this danger. This condition may come on as late as a year or 18 months after the last dose. If its true nature is recognized, i. e., that it is exhaustion of nerve forces that have not been completely restored, it can easily be overcome. No drugs of any kind should be used. Complete rest should be insisted upon. This matter of overwork should always be borne in mind, because it is the most frequent cause of relapse that we have. Next to it comes the abuse of alcohol. It disturbs the stomach, interferes with nutrition, produces nervous irritability, insomnia, and, in short, rapidly breaks down the nervous powers of resistance that nature has been trying to build up since the last dose of morphine.

The same is true to a lesser degree with sexual excess. Very many relapses are brought about in this way. Morphine causes a deterioration of the moral sense in some cases. Morphinism, especially advanced morphinism, causes a total cessation of the sexual appetite. There are but few exceptions to this statement. On the other hand, during the first few weeks of the convalescence the sexual organs in either sex are in a very excitable condition. Where the sexual powers have laid dormant for from five to twenty years we need not be surprised, because the convalescent of either sex feels impelled to experiment with the newly restored sexual powers. Sexual indulgence of itself is not likely to be harmful where it is not followed by exhaustion. If the latter is the case, the convalescent should be very abstemious. If sexual indulgence means late suppers of indigestible material and alcoholic stimulants, it is almost certain to mean a relapse. A life of this sort will soon lead to a condition of nervous irritability and insomnia such as I have already described. In short, the addict should refrain from all those things that tend to weaken the nervous powers of resistance. The contrary is also true—everything except drugs that can assist the convalescent to regain his nervous and mental balance should be resorted to. The psychological effect of complete independence of drugs for support is of great benefit to these patients. This, of course, does not apply to really grave intercurrent disease. Outdoor life, sleeping in the open air, plenty of plain, nutritious food, moderate work or exercise that can be discontinued at the first signs of fatigue, regular hours—all these are matters of great importance. How long a time is needed for complete convalescence? I should say from six to eighteen months. If the convalescent behaves, at the end of eight weeks or thereabouts he will be the very picture of health. There may be a gain of as much as 40 pounds. If the convalescent is in middle life he will look from ten to twenty years younger. Now, if we may look for all these happy results as early as eight weeks after the last dose, why do I say six to eighteen months are needed for complete convalescence? I say so because it is the truth. Everything seems so delightful at the end of eight weeks that the family doctor, the convalescent's friends and the convalescent himself will begin to think that I am just a crank about convalescence, and that my advice may be safely

ignored. After the convalescent has broken down his nervous powers of resistance by indiscretion in work or dissipation and has relapsed, the convalescent will be apt to perceive too late that my advice was sound. Not so the family doctor and friends; they will either say that the convalescent willfully returned to the drug or lay it all to morphinism, i. e., say that morphine so weakens the will that a permanent cure is impossible. All nonsense; every bit of it! Every patient of mine who left my place a year or more ago free from morphine, and who since that time has followed my advice faithfully, is still free from morphine. I have a goodly number of such cases to my credit. I am very sorry to say that honesty compels me to admit that very many who left me free from morphine have since relapsed. I have never been able to trace a willful return to morphine, but I have been able to trace in nearly every case either willful or thoughtless indiscretion in work, alcoholic or sexual indulgence to such an extent that the will is overwhelmed. It is a matter of but little importance to the convalescent whether he has a weak or strong will, if he proposes to have his fill of alcoholic and sexual excess, for in this case the possession of a will equal to that of Bismarck's would prove to be of no avail. On the other hand, if the convalescent has the common sense to put his conduct and environment in harmony with the principles laid down in this article, no strain will be put upon his will, and even a weak will will be found sufficient. Domestic trouble is a great discouragement to the convalescent. It is a great thing for a morphine addict to free himself from the clutches of this vile drug. Great things are rarely accomplished without sacrifice. There is nothing inherent in morphinism that prevents a complete recovery. There is, however, something wrong with very many of the people in the country—a great many of us are unwilling to make any sacrifice of our present inclinations for the sake of our future good. The morphine addicts are very much like people in general. Some are wise and some are foolish. I can usually form a pretty correct estimate of a patient's prospects of permanent recovery while he is still with me. In every case where the patient not only listens to me eagerly while I am giving my opinions as to the best course to be pursued during convalescence, but asks me all sorts of questions about convalescence, that patient has since made good. Nevertheless, I never cease trying to teach the unpromising patient the way he should go. For I conceive this to be my duty.

The reader, of course, knows that the normal person can work until he seems to be all worn out, and then under the influence of a strong will, or some extraordinary call for extra work, like a fire or some great danger, that he can pull himself together and overcome this fatigue without stopping to rest, and work on hour after hour. The man on the street calls this his second wind. The convalescent has no second wind, and very little first wind either, for that matter. And it is fully six to eighteen months before he can

endure dissipation or severe and prolonged physical or mental strain without bringing on grave nervous disturbances.

Morphinism does not mean insanity. But morphinism is always accompanied by mental symptoms, and these do not at once disappear with the last dose by any means.

I once knew an alcoholic who had been a total abstainer for three years when I first met him and continued such for two years longer. I never conversed with him that he did not mention some subject connected with alcoholism every few moments. I made up my mind that, although an abstainer, he was still an alcoholic mentally. Familiar faces, familiar scenes, familiar tasks many times performed bring back old trains of thought. For this reason a new environment and some light occupation never before pursued are very desirable during convalescence. Just what occupation and just what environment to select for each case calls for close study of the patient's temperament and circumstances.

In all cases the simple life is the proper thing for the convalescent. I will say for the encouragement of the addict that he will find, if he behaves himself, that the time he must spend for a full restoration of his health to be the happiest that he has known for many a long day.

Book Reviews.

Nervous and Mental Diseases. By Archibald Church, M.D., Professor of Nervous and Mental Diseases in the Northwestern University Medical School, Chicago; Late Professor of Neurology in the Chicago Polyclinic; Neurologist to St. Luke's, Wesley and Mercy Hospitals; Consulting Neurologist for the Michael Reese Hospital, etc. And Frederick Peterson, M.D., ex-President of the New York State Commission in Lunacy; Formerly Professor of Psychiatry, Columbia University; Consulting Alienist, Bellevue Hospital; Manager of the Craig Colony for Epileptics at Sonyea, New York; ex-President of the New York Neurological Society. With 350 illustrations. Eighth Edition, Thoroughly Revised. Philadelphia and London: W. B. Saunders Company. Baltimore: The Medical Standard Book Co. 1914. Cloth, $6.50 net.

The present edition of the above-mentioned book should be as popular with students and general practitioners as any of its predecessors. It is written in the same pleasing style and along the same general plan as former editions, the arrangement of the book having been practically untouched, the new material being inserted as interpolations. Since the last edition there have been many additions to our knowledge of mental and psychical disorders. Those which have proven of practical value have been thoroughly touched upon. Amongst the new material are sections on the glands of internal secretion and their relation to nervous affections, an im-

mense amount of material on syphilis of the nervous system, including special reference to the latest investigations of the spinal fluid and the relation of the spinal fluid changes to the various organic diseases of the brain and spinal chord. These, with many other alterations, again brings the book up to date, so that it should prove as serviceable as heretofore.

A Text-Book of Diseases of the Nose and Throat. By D. Braden Kyle, A.M., M.D., Professor of Laryngology and Rhinology, Jefferson Medical College; Consulting Laryngologist, Rhinologist, and Otologist, St. Agnes' Hospital; Fellow of The American Laryngological Association, etc. With 272 illustrations, 27 of them in colors. Fifth Edition, Thoroughly Revised and Enlarged. Philadelphia and London: W. B. Saunders Company. Baltimore: The Medical Standard Book Company. Cloth, $4.50 net. 1915.

It is unnecessary to inform the profession that Kyle's latest effort is good, for from previous experience they know it could not be otherwise. In the present instance we find a much enlarged and more finished product. Still, as in former editions, one is not worried with wading through a mass of unnecessary detail before he comes to the meat of the subject. As heretofore, the subjects included are very satisfactorily covered. Besides much new material has been included, viz.: Vaccine therapy, lactic bacteriotherapy in atrophic rhinitis, salvarsan in the treatment of syphilis of the upper respiratory tract, negative air-pressure in accessory sinus disease, congenital insufficiency of the palate, etc., etc., and a number of other sections have been entirely rewritten, thus bringing the symptomatology, etiology and treatment up to date. As a working book the general practitioner will find the present volume more satisfactory than ever.

The Clinics of John B. Murphy, M.D., at Mercy Hospital, Chicago. February, 1915. Volume IV, Number 1. Philadelphia and London: W. B. Saunders Company. Baltimore: The Medical Standard Book Co. Published Bi-Monthly. Paper, $8 per year.

This issue contains talks on gangrenous appendicitis, lacerated wound of thumb, mixed round and spindle cell periosteal sarcoma of the right femur, aneurysm of the brachial artery with endoaneurysmorrhaphy, division of the brachial plexus at the level of the first rib, etc. Vascular surgery is attracting much attention at present, therefore the report on the case of the brachial aneurysm, especially the operation and post-operative course, should prove very acceptable to the readers of The Clinics. The remaining articles cover a number of subjects, all of which are interesting to the practical surgeon.

MARYLAND MEDICAL JOURNAL

NATHAN WINSLOW, M.D., *Editor.*

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BALTIMORE, MAY, 1915

"IN DUE SEASON WE SHALL REAP, IF WE FAINT NOT."

FOR more than thirty years, over a quarter of a century, the Maryland General Hospital has been alleviating human ills, both bodily and mental. Far the larger part of those treated have been free patients. During all this time those in control of the institution have made no direct appeal to the public for funds with which to carry on this noble work, but have, by strict economy and a gift from a friend here and there, managed to meet its obligations. The time has come, however, in which it finds itself cramped financially, and if it is to continue the good work the public must come to its aid. It does not go before the public as a supplicant, but as an institution asking only what is its due. It has been serving the public well and faithfully during these many years, and now the public should be willing on their part to make a small return for this service. The Board of Managers, feeling that the public does appreciate the labor expended on the charity patients of the section of the city which the Maryland General Hospital serves, has therefore decided to institute a campaign with the ultimate object of raising $200,000, so that in the future the hospital can better serve its clientele. Surely, this is a modest amount when one takes into consideration the amount of good done by the institution. A crisis is staring the hospital in the face. It must have help, or it must curtail its work. Baltimore cannot afford to forsake such an honorable institution now that it is in stress. Such a catastrophe would be a crying shame upon the

charitableness and appreciativeness of its citizens. Think of it, a hospital now more than thirty years old appealing in vain for help! Such is not and cannot be the case. Certainly there are enough public-spirited citizens in our midst to guarantee the success of the campaign now under way. These will see to it that a hospital with 70 per cent. free beds, and an out-patient department of 20,000 cases yearly, shall not be hampered for a paltry $200,000. They will see to it that an institution which has maintained an out-patient obstetrical clinic of many hundred obstetrical cases in the homes of the very poor in the northwestern section of Baltimore; that has maintained a lying-in department, in which three hundred needy women are delivered yearly, and a hospital with a daily census of 150 cases, a nursing staff of 55, and a resident staff of 8, shall not appeal in vain to the generosity of Baltimore's citizens. The appeal is being made for the purpose of raising money to pay off a floating debt, to build additional free wards, to build more private rooms and private wards, to build a laundry and electric-lighting plant, and last, but not least, to build a nurses' home. To carry out the above program money must be had. Either help must be received from the public or a great charitable work in a portion of the city in which there is a large population needing free medical treatment must be seriously crippled. Below is a summary of the year's work of the hospital:

Cases in the hospital, 2300.
Emergency and accident cases, 2051.
Surgical operations, 1121.
Dispensary cases, 15,768.
Obstetrical, 316.

Yearly the demands upon the capacity of the hospital are becoming greater. In order to provide properly for this the plant must be enlarged, otherwise the work of the hospital will be greatly hampered.

The task before those engineering the campaign is colossal, but they have gone at it with the determination of winning. They are imbued with the spirit, "In due season we shall reap, if we faint not." They do not intend to falter, but you, our readers, can make their task easier by sending in a contribution or by influencing a friend philanthropically inclined.

Medical Items.

Dr. William H. Morriss, Jr., Johns Hopkins Medical School, '12, surgeon in charge of the Hospital for Women of Maryland, Lafayette avenue and John street, sailed from New York Saturday, April 17, for La Panne, Belgium, where he will become a member of a war hospital staff.

Dr. Morriss, who is a son of William H. Morriss, secretary of the Young Men's Christian Association, volunteered some time ago for service in a medical corps at Europe's battle front, as a member of the contingent sent abroad by the American Red Cross. About three weeks ago he received his commission from Washington, and was told to get ready to sail the middle of April.

Two units of American medical men sailed with him, the party consisting of six. He was the only representative of Baltimore. The hospital in the staff of which they will enroll is an established Belgian institution that just now is taking care of soldiers sent to La Panne from the front.

Dr. Clapham P. King, a Maryland surgeon who is with the Red Cross forces in Serbia, is convalescing after an attack of typhus.

While returning to his home in East Baltimore on the night of March 26, Dr. Fred Caruthers was held up and robbed by a negro.

On March 23 Surgeon-General Gorgas came to Baltimore by invitation of Mayor Preston to confer with the city officials regarding the abolition of the pest mosquitoes. General Gorgas expressed the opinion that it is impossible to destroy the mosquito absolutely, and that it is almost wholly a matter of drainage, thereby removing the breeding places of the mosquito.

On March 18 Dr. Jacob H. Hartman, one of the founders of the Baltimore Eye, Ear and Throat Hospital, was given a banquet, at which a handsome sliver service was presented to him on behalf of the staff of the hospital.

Dr. and Mrs. Joseph C. Bloodgood of 904 N. Charles street are building a handsome residence at the end of Midvale road, Roland Park, which they expect to occupy in the autumn.

Dr. Frank J. Goodnow, president of Johns Hopkins University, is in receipt of a cablegram from Sir William Osler, dated Oxford, England, in which he says that physicians, nurses and money are urgently needed for Serbia; that conditions are lamentable, and typhus is raging.

On April 12 the Maryland General Hospital launched a campaign to raise $200,000 for the building of new wards and private rooms; also for remodeling the institution. The campaign is State-wide, and is being conducted by the Methodist churches and Epworth League organizations of the State.

Drs. Veander N. Leonard and Henry N. Shaw, both of Baltimore, who have been on duty for six months in British base hospitals, have returned to Baltimore.

Dr. Winton M. Nihiser of Hagerstown, while attending a family suffering from the effects of carbon monoxid gas, was partially overcome by the gas.

Drs. William H. Welch and Howard A. Kelly, both of Baltimore, have agreed to serve on the special emergency committee to devise plans to combat the epidemic of typhus fever in Serbia.

A campaign to annihilate the fly has recently been inaugurated in Baltimore by Dr. Nathan R. Gorter, Health Commissioner. He will make an aggressive fly campaign, backed up by a city ordinance regulating stables and with the co-operation of the householders.

Arrangements are being made by the officials of Spring Grove State Hospital, Catonsville, Dr. J. Percy Wade, superintendent, for the transfer shortly of a large number of patients to the new Eastern Shore State Hospital at Cambridge. The patients will be taken to Baltimore, where they will board one of the city iceboats loaned for the occasion and taken to Cambridge.

The vacancies at Spring Grove will be filled with patients from Bayview Hospital, which has become overcrowded.

The medical officers of the Maryland National Guard and the Baltimore members of the Army Medical Reserve Corps have been invited to participate in a medical camp of instruction to be held in Pennsylvania next summer.

Between 30 and 40 prominent physicians and surgeons of Baltimore are members of the Medical Reserve Corps, and it is thought that many of them will go to the camp for at least a week or 10 days. They have been invited by Surgeon-General W. C. Gorgas of the United States Army.

The building of the Eastern Shore State Hospital for the Insane, located near Cambridge, was accepted recently by the board of managers of the institution at a meeting in Cambridge.

Mr. and Mrs. Nathaniel G. Grasty announce the engagement of their daughter, Mary Garland, to Dr. Roscoe R. Spencer, Johns Hopkins Medical School, '13, of West Point, Va.

Dr. Spencer was formerly connected with Bayview Hospital, and is now assistant surgeon in the United States Public Health Service in Washington. He has recently been commissioned by the Government to investigate the ravages of spotted fever, which has devastated certain portions of Montana and the adjoining States, and will leave for the West about May 1.

BIRTHS.

To Harry D. McCarty, M.D., University of Maryland, '05, and Mrs. McCarty, of 37 W. Preston street, Baltimore, February 18, 1915, a son—Horatio Ball.

To James Herbert Bates, M.D., University of Maryland, '07, and Mrs. Bates, of Millington, Md., February 28, 1915, a daughter—Margaret.

Recently to J. Dawson Reeder, M.D., University of Maryland, '01, and Mrs. Reeder, of 639 Fulton avenue, Baltimore, a daughter.

MARRIAGES.

Ernest William Frey, M.D., University of Maryland, '12, to Miss Mary Jeanette Disney, both of Baltimore, Md., at Baltimore, March 22, 1915.

Frederick T. Leitz, M.D., Physicians and Surgeons, '02, to Miss Beatrice Bernheimer, both of Baltimore, at the Belvedere Hotel, Baltimore, April 7, 1915.

DEATHS.

Charles Ellsworth Boyd, M.D., Baltimore Medical College, '92; University of Wooster, Cleveland, '92; a Fellow of the American Medical Association, died at his home in Newton, Iowa, February 27, 1915, from pneumonia, aged 45 years.

Thomas Gay Whims, M.D., University of Maryland, '11; a member of the Medical Society of the State of North Carolina and a practitioner of Lasker, N. C., died in the University Hospital, Baltimore, March 4, 1915, from sarcoma of the arm, for which two surgical operations had been performed, aged 37 years.

Samuel Claggett Chew, M.D., University of Maryland, '58; LL.D. University of Maryland, '07; professor of materia medica in his alma mater from 1864 to 1866; professor of medical practice until 1907, and a year later made emeritus professor of medicine; dean of the University of Maryland from 1874 to 1879 and twice president of the Alumni Association; twice president and thrice vice-president of the Medical and Chirurgical Faculty of Maryland; consulting physician to Johns Hopkins Hospital; president of the board of trustees of the Peabody Institute and member of the board of regents of the University of Maryland, died at his home in Roland Park, Baltimore, after an illness of more than a year, March 22, 1915, aged 77 years.

William B. Smith, M.D., University of Maryland, '99; a Fellow of the American Medical Association and a practitioner of Hampton, Va., who sailed for Bristol, England, February 25 as surgeon of the steamer Victoria, died in Bristol, March 10, 1915, aged 41 years.

Greensbury W. Freeny, M.D., University of Maryland, '62, for many years a member of the Board of Education of Pittsville, Md., died at his home in that city, March 15, 1915, aged 62 years.

Oliver G. Getty, M.D., University of Maryland, '78, a practitioner of Grantsville, Md., until 1893, died at his home in Meyersdale, Pa., March 14, 1915, from cerebral hemorrhage, aged 59 years.

Horace M. Julian, M.D., University of Maryland, '95, died at his home in St. Louis, January 30, 1915, from cerebral hemorrhage, aged 53 years.

R. Sydney Cauthen, M.D., Baltimore Medical College, '02; a Fellow of the American Medical Association; a specialist on diseases of the eye, ear, nose and throat, of Charlotte, N. C., died at his home in Charlotte, March 24, 1915, from heart disease, aged 43 years.

Ernest P. Magruder, M.D., Georgetown University School of Medicine, '02, of Washington, D. C., died of typhus fever in a hospital in Belgrade, Serbia, April 8, 1915, aged 40 years. Dr. Magruder was a native of Upper Marlboro, Md. He was an alumnus of Johns Hopkins University, and for years was superintendent of the Emergency Hospital, Washington. At the time he left for Europe he was professor of clinical surgery at Georgetown University Medical School.

AMERICAN COLLEGE OF SURGEONS—THE THIRD CONVOCATION.

THE third convocation of the American College of Surgeons was held in the Memorial Continental Hall in Washington on November 16 at 8 o'clock. The program for the evening was as follows:

7.30—Fellows and Guests assemble.
7.40—Governors assemble.
7.45—Candidates for Fellowship assemble.
8.00—Regents assemble with Honorary Fellows and Guests.
Invocation by His Eminence James Cardinal Gibbons.
Introductory Remarks by the President, J. M. T. Finney.
Presentation of the Roll of Candidates for Fellowship.
Conferring of Fellowships by the President.
Introduction of Honorary Fellows individually by the Regents and conferring of Fellowships by the President.
Fellowship Address by Edward H. Bradford.
Concluding Remarks by the President.
Adjournment followed by an informal reception to the Fellows and Guests by the Officers of the College.

The president, Dr. J. M. T. Finney, in the course of his introductory remarks, announced that subscriptions to the endowment fund of $1,000,000, which proposition has been presented to the college at its annual meeting, now amounted to approximately $250,000. He predicted that the full sum would be easily secured before the next annual meeting in 1915.

The secretary, Dr. Franklin H. Martin, before presenting the roll of candidates, conveyed to the fellows of the college a greeting from Sir Rickman Godlee, president of the Royal College of Surgeons of England, who came from England at the time of the first convocation to assist in the inauguration of the American College. This greeting included the presentation of a handsome gavel which had been prepared by Sir Richman Godlee as a gift to the college, and upon which the following sentiment was inscribed:

> This mallet was devised and used by Lord Lister and is presented to the American College of Surgeons by Sir Rickman Godlee, then P.R.C.S. England, in memory of his visit to Chicago, November, 1913.

The president, in receiving this token of friendship, spoke of the great honor that Sir Rickman Godlee had conferred upon the American College of Surgeons by his visit and his address of one year ago, and of his pleasure in receiving this beautiful gavel which linked us with the Royal College of Surgeons, with Sir Rickman Godlee and his illustrious uncle, Lord Lister, and ordered that the gavel be forever preserved in the archives of the American College.

The secretary then presented the roll of honorary fellows and of fellows. The list of fellows numbered 646. Their names will appear in the annual directory, which will be distributed to the fellows.

The honorary fellows were then introduced in turn by members of the Board of Regents, as follows:

Dudley P. Allen of Cleveland, introduced by Harry M. Sherman; William C. Gorgas of Washington, introduced by Charles F. Stokes; Lewis Stephen Pilcher of Brooklyn, introduced by George E. Brewer; Sir Thomas George Roddick of Montreal, introduced by George E. Armstrong; J. William White of Philadelphia, introduced by Edward Martin.

The president then conferred the honorary fellowships.

Following the fellowship address by Dr. Edward H. Bradford,

Dean of Harvard University Medical School, there was an informal reception by the officers of the college to the fellows and guests.

THE HIGHER EDUCATION IN SURGERY.

By Edward H. Bradford, M.D., F.A.C.S., Boston.

FELLOWSHIP ADDRESS.

THE American College of Surgeons has shown such remarkable vigor in its development that there is every reason to believe that it will become a most important agency in the advancement of American surgery. It may therefore be proper to call to your attention a few suggestions for the consideration of this organization relating to better education and training of our surgeons.

It has been said by those who undertake to study the American people that the typical American, although energetic, resourceful and venturesome, lacks a knowledge of fundamentals. He has the defects as well as the virtues of the pioneer. Are these traits characteristic of the American surgeon? If they are, the fact should be reckoned with in our plans for the training and education of our surgeons. We should foster the energy of the pioneer and give to him the fundamental knowledge needed by a master.

In the early days the aspirant in surgery became the student of the nearest active practitioner to whom he could attach himself. He was an articled assistant. After a while he ventured upon practice alone, and in the rough school of experience, competition and emergency he developed force. Later, groups of forceful men associated themselves together and formed proprietary schools, and the country was filled with energetic aspirants in surgery.

There are advantages in this system of education in a large, new and unsettled country—the training fits the locality. It does not, however, tend to develop thoroughness or scholarship.

The European method of educating surgeons was to collect students in the large cities, where they were taught by learned men the fundamentals of knowledge in medicine and surgery. They learned anatomy and were stimulated by watching the great surgeons at work in their hospitals. Besides learning the essential principles, they acquired high standards.

The product of the American system of educating surgeons has been excellent. There have been developed some remarkable men and as alert and resourceful a body of skilled surgeons as can be found in any country. But can we claim to have produced many of those who have done most to influence the surgical thought of the world? We developed Ephraim McDowell,-but we have yet to produce a Lister.

In this connection it is interesting to reflect upon how much more America, a professedly peaceful country, has done to revolutionize the science and art of war than the humane art of surgery. The advance in open order, field entrenchment for the attacking army, the use of cavalry in long raids on the enemy's lines and as mounted infantry, improved implements of war, the rifle, the automatic pistol, the Hotchkiss gun, and in naval warfare, the ironclad, lateral shell firing, the torpedo, the mine, the submarine—all are products of American invention, or first shown to be of value by American example. The field telegraph, the heliograph, the tele-

phone and the American invention, the flying machines, have revolutionized war. During the same period surgery has been revolutionized, but how much can we justly claim that America has contributed to the marvelous changes wrought in the last 50 years? * * *

Our medical schools today have, thanks to the energy of our medical profession and the influence of the American Medical Association, been brought to a standard state of efficiency, and no medical student can become a practitioner who has not received a proper knowledge of the fundamental sciences. When he reaches the stage of practice he should know how to use his knowledge on lines of trained reasoning, or appreciate the arguments of those who do.

If the graduate desires to practice surgery, he should be trained as a dresser and should, after finishing his medical education, have opportunities for technical training in surgery by service in hospitals that need properly qualified assistants in surgery and residents.

The hospital should do more than give positions to young men who help in the surgical work of the hospital; they should arrange for their careful training in surgery.

Endowed hospitals today should not be content to care merely for the sick in their wards; they should aid in the combat with disease. There should be connected with every hospital not only nursing and operating facilities, but also agencies for determining the ultimate results of operative procedures. The hospital should be a clinical laboratory for the acquisition of knowledge relating to the surgical care of those surgically afflicted. A proper valuation of surgical methods is essential, and for this terminal results must be tabulated. This can be done by efficient organization; it cannot be properly done by the desultory efforts of a few energetic surgeons.

Research and animal experimentation are aids, but experiment being impossible in the human animal, sound generalization is only possible when based upon a large number of carefully recorded cases collected in large hospitals and studied by a number of trained observers. This is the proper work of hospitals, and they should be rated according to their efficiency in such work.

From hospital residency the young surgeon can develop further as a junior associate to a broad master in surgery, who should encourage such association and should promote individual effort and independent thinking of the properly trained who seek to advance themselves to mastership by thorough preparation and carefully considered experience.

Much work by an association like this is needed to promote a proper knowledge in the community of the need of co-operation of hospitals in the work of the development and education of surgeons. It is not only in the arrangement for dressers and residents that this is needed, but also in a suitable arrangement of the services of attending surgeons, that it may be possible to utilize the experience gained for the benefit of the science of surgery. Short services, interrupted services, services so arranged that generalization in regard to methods is difficult, if not impossible, are too frequently provided for in hospital organization. The surgeon spends his energies centering his attention upon individual cases, presenting few surgical problems, and is unable to devote his time to the larger problems of the treatment of disease in general. The

younger surgeon may be perfectly competent to take care of the individual case, but the surgeon of experience with various methods should be given an opportunity to direct the treatment and to determine the value of improved methods. In many cases this causes disarrangement of existing hospital services, but where the authorities are aware of the need of such changes they can be brought about to the benefit of surgical science.

The road to the leadership in surgery is a long one. If "art is long," surgery is longer. It may take but little time to teach a man to play the violin, but for a virtuoso—a Kreisler—years are needed, but how much more is required to develop a Mayo, a Kocher!

How much can our societies aid in the better education of surgeons?

The only real education is self-education. This is helped by opportunities of comparison with others; the discussions of colleagues reveal individual strength and weakness.

Surgical societies should be organized so as to promote the careful study of surgical problems, the value of methods, a proper standardization of treatment, and should discourage the exploitation of individual success. Little benefit could come from a meeting of Jack Horners, though a discussion among them might furnish entertainment. Co-operative work among surgical societies would be of great value in the direction of study, the promotion of interest and in the elevation of standards.

A more difficult matter suggests itself in the question of the bestowal of proper degrees and titles. The public has become trained with more or less accuracy to distinguish between the incompetent and proficient in music. Would it not be well if there could be some accepted standards of recognition of the trained and judicious in surgery, as compared with those whose qualities are chiefly energy and boldness, driving forward an untrained mind—who are, in short, surgical adventurers? Masterly skill in surgery is not a quality easily recognized by the public. The death rate was formerly a check to the injudicious surgeon; today, thanks to asepsis, there should be no death rate, and it is hard to follow the trail of failure among the convalescents who rejoice in a recovery from what has seemed to them the jaws of death, nursing their impaired activities with satisfaction in the thought of what might have been and what they think they have escaped from. * * *

American surgery will be advanced if there are developed in this large country of ours several foci where the art of surgery is practiced and taught in the highest degree of excellence. It is a great satisfaction to the observer to see, already, centers developed where the work is worthy of the careful consideration of the leading surgeons of the world. An increase in the number of these places where the science of surgery is investigated and the art of surgery efficiently practiced cannot fail to produce results which will, in time, claim leadership in surgical thought.

A few words only are needed in regard to the question of what may be termed surgical ethics, a subject which cannot be ignored by an association like the American College of Surgeons, which is to maintain the standards of our profession.

If it is borne in mind the great opportunity which exists for the gross misuse of the power the surgeon holds it might seem extraordinary that so little of gross commercialism or base malpractice

exists. The surgeon at the head of a small private hospital has power greater than that of a czar. Under an organization trained by himself, with no one but his attendants to criticise his activities, he wields a power controlled only by his conscience and his higher instincts. It may be said that in the process of his education and in contact with his fellow-men no one can rise to eminence in surgery without an education which elevates him from the baser temptations which are more potent in other callings. It certainly is true that in this commercial age medicine and surgery are less commercialized than any of the other large human activities. Michiavelli, the great thinker of the period of the Renaissance, held up the standard of the ideal prince whose craft and deceit were regarded as the proper functions of the ruler and statesman, but we have no evidence that the surgeons of that time were other than truthful and honest.

Today the philosophy of the superman, that might makes right, will never find acceptance in our profession. As the soldier must have courage, and the priest and clergyman purity, the surgeon must be human.

It cannot, however, be ignored that the danger of lowering the standards among young and ambitious surgeons, eager for the renown and emolument of a large practice, is something which must be considered by an organization like the American College of Surgeons. There can be no compromise in this matter. Anyone practicing the art and science of surgery who is unmindful of the high responsibilities and duties of his profession should receive immediately the condemnation of his fellows. The true surgeon should be, like Caesar's wife, "above suspicion;" he must be above reproach.

It can be said that the occasion is ripe for the higher development of surgery in America. How long the present Balkanization of Europe is to continue, and how much chaos is to result, no one can tell, but it is certain that the Mexicanization of North America will stop at the Rio Grande. If we have peace, we have also the responsibilities which come with the blessings of peace, and these are to be regarded as held by us in trust for the benefit of the human race. * * *

Modern surgery may be said to have begun in France over 100 years ago through the leadership of a brilliant group of surgeons, who were followed by an illustrious school of British surgeons. Then came the wonderful rise of German surgery to which we are all such debtors. Are we to remain followers, provincials, notable chiefly for our ability to adopt the example and teaching of others?

In the literature of our art there are names before which we all do reverence—Dupuytren, Larry, Nelaton, Brodie, Paget, Lister, von Langenbeck, Billroth, Volkmann. They were thought-compelling masters who shaped the surgical science of a century.

What names are to be written now upon the open book of the history of surgery? Is there not a page ready for the names of great Americans who will give to the noble art of surgery a luster never known before?

It is the proud function of the American College of Surgeons to aid in the advancement of the higher education in surgery. The American surgeon will never lack skill, energy, nor resourcefulness; to these must be added wisdom.

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The well-known researches of Vedder and Rogers have proven the specificity of ipecac in amebiasis; and Alcresta Ipecac, Lilly, overcomes the difficulty surrounding the oral administration of the drug in this disease.

Bass and Johns of New Orleans were the first to advocate Alcresta Ipecac in the treatment of Pyorrhea Alveolaris, shortly after the announcement of Barrett and Smith that a protozoan—Endamebas Buccalis, and perhaps other species of endamebae, was the causative agent in this extremely prevalent malady.

Thus Alcresta Ipecac has come into widespread use by both physicians and dentists everywhere, and since it has been clearly demonstrated that pyorrhea is frequently the underlying cause of many other systemic disorders, and that, according to good authority, fully 95 per cent. of the adults over 30 years of age have pyorrhea, it will readily be seen that the possibilities of this new compound are very great.

The Pneumonia Convalescent.

WHILE the course and progress of acute lobar pneumonia is short, sharp and decisive, the impression made upon the general vitality is often profound and apparently out of proportion to the duration of the disease. Even the robust, sthenic patient is likely to emerge from the defervescent period with an embarrassed heart and general prostration. In such cases the convalescent should be closely watched and the heart and general vitality should be strengthened and supported, and this is especially true as applied to the patient who was more or less devitalized before the invasion of the disease. For the purpose indicated, strychnia is a veritable prop upon which the embarrassed heart and circulation can lean for strength and support. As a general revitalizing agent is also needed at this time, it is an excellent plan to order Pepto-Mangan (Gude), to which should be added the appropriate dose of strychnia, according to age, condition and indications. As a general tonic and bracer to the circulation, nervous system and the organism generally, this combination cannot be surpassed.

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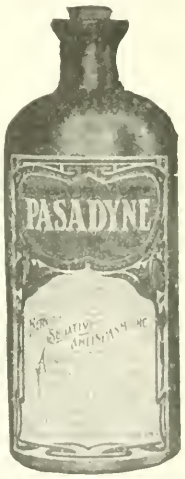

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minutes or until the powder is completely dissolved.

To fill the syringe, invert the bulb and remove the rubber stopper from its mouth. Insert the needle of the syringe into the solution in the inverted bulb and draw the fluid into the syringe.

By inverting the bulb before inserting the needle, one avoids the likelihood of drawing the foam or bubbles (caused by agitating the liquid in the bulb) into the syringe, as the foam will rise to the top of the solution, leaving the field for the insertion of the needle perfectly clear.

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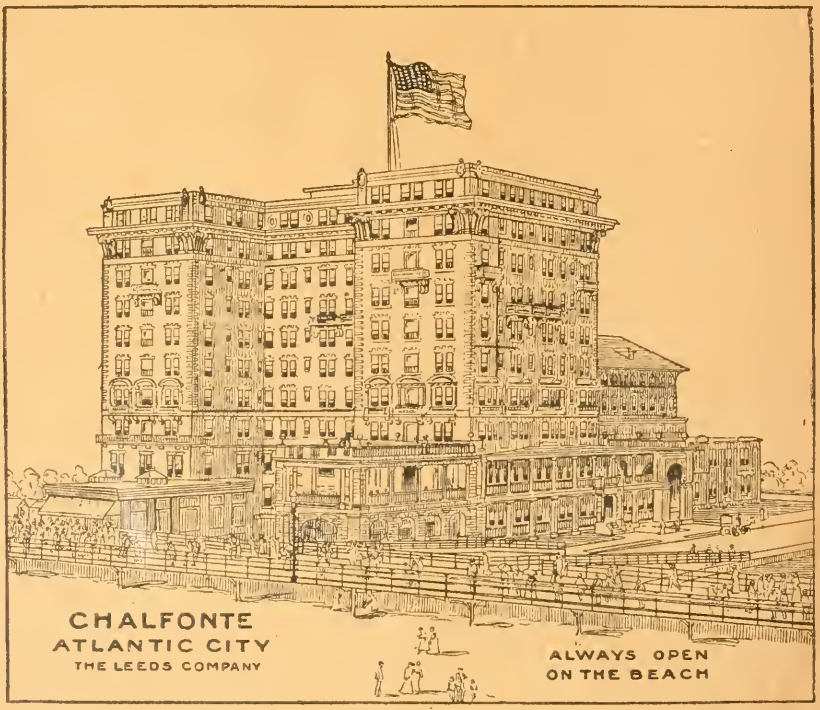

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